

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY

In the Matter of

Price Cap Performance Review  
for Local Exchange Carriers

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CC Docket No. 94-1

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REPLY OF U S WEST COMMUNICATIONS, INC.

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**REPLY OF U S WEST COMMUNICATIONS, INC.**

I. **INTRODUCTION AND SUMMARY**

With the enactment of the Telecommunications Act of 1996,<sup>1</sup> the time and resources of the Federal Communications Commission ("Commission") will necessarily become more precious and increasingly taxed. As new dockets are opened and existing dockets continued, the Commission must examine each one for opportunities to increase administrative efficiency. The Commission has such an opportunity in this Fourth Further Notice of Proposed Rulemaking.<sup>2</sup> U S WEST Communications, Inc. ("U S WEST") offers two options which will achieve the goal of preserving Commission resources -- adoption of U S WEST's "Capped Index Plan"<sup>3</sup> or continuation of the Commission's Interim Price Cap Plan.<sup>4</sup>

<sup>1</sup> Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (or "Act").

<sup>2</sup> In the Matter of Price Cap Performance Review for Local Exchange Carriers, CC Docket No. 94-1, Fourth Further Notice of Proposed Rulemaking, FCC 95-406, rel. Sep. 27, 1995 ("Fourth FNPRM").

<sup>3</sup> Comments of U S WEST Communications, Inc., filed herein Jan. 11, 1996 ("U S WEST Comments").

In its comments, U S WEST proposed a plan by which the Commission could eliminate the need for lengthy future price cap review dockets and complex price cap index (or "PCI") adjustments.<sup>5</sup> In this filing, U S WEST provides further details and support for its Capped Index Plan, under which the price cap indexes are simply capped at their current levels with no further adjustments for inflation, productivity, or exogenous costs.<sup>6</sup> This plan provides the Commission with a price ceiling and allows the increasingly competitive marketplace to function independently, without artificial constraints or stimuli that produce undesirable market distortions. Commission resources are preserved because less regulatory oversight of complex economic models and price cap tariff filings will be necessary. The Capped Index Plan offers these and other significant benefits over the prior system of complex adjustment formulas.

Should the Commission find it essential to continue to use an adjustment formula for the annual revision of price cap indexes, the Commission should first extend its existing Interim Price Cap Plan for an additional one- or two-year period. Doing so will give the Commission time to analyze the impacts of access reform and the Telecommunications Act of 1996 on competition in the telecommunications marketplace.

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<sup>4</sup> In the Matter of Price Cap Performance Review for Local Exchange Carriers, First Report and Order, 10 FCC Rcd. 8961 (1995) ("First Report and Order").

<sup>5</sup> U S WEST Comments at 3-5.

<sup>6</sup> The only exceptions would be the treatment of sharing associated with periods prior to the implementation of the Capped Index Plan.

Absent adoption of U S WEST's Capped Index Plan or continuation of the Interim Price Cap Plan, U S WEST recommends that the Commission move forward consistent with its tentative conclusion in the Fourth FNPRM and adopt a total factor productivity ("TFP") methodology to calculate local exchange carrier (or "LEC") productivity.<sup>7</sup> For that purpose, the Commission should select the Christensen Associates Simplified TFP methodology proposed by the United States Telephone Association ("USTA").<sup>8</sup> That model is both the most accurate indicator of LEC productivity and the most easily administered and verified methodology. Although commenters have attempted to demonstrate weaknesses in the original Christensen methodology,<sup>9</sup> there is little substance to their objections. The introduction of Christensen's new Simplified TFP model utilizing publicly available data negates a majority of their arguments. The objections raised are thoroughly rebutted in the attachments to USTA's Reply Comments filed concurrently in this proceeding.<sup>10</sup> Two commenters have presented alternative approaches to the

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<sup>7</sup> Fourth FNPRM ¶¶ 13-72.

<sup>8</sup> This Simplified TFP methodology was developed for USTA by Christensen Associates and was attached to USTA's Comments to the Fourth FNPRM, filed herein Jan. 16, 1996 ("Simplified TFP").

<sup>9</sup> Attached to USTA's Comments to the Further Notice of Proposed Rulemaking, filed herein May 9, 1994 at Attachment 6, Productivity of the Local Telephone Operating Companies Subject to Price Cap Regulation, dated May 3, 1994, revised in an Ex Parte letter filed Jan. 18, 1995.

<sup>10</sup> Reply Comments of USTA, filed Mar. 1, 1996 ("USTA Reply Comments").

Christensen methodology.<sup>11</sup> The deficiencies of these alternatives are also addressed in USTA's Reply Comments.

The Christensen Simplified TFP approach continues to be the Commission's best choice for the calculation of a TFP-based productivity factor for the price cap LECs. And should the Commission find that a TFP-based productivity adjustment is necessary, then U S WEST proposes two no-sharing productivity factors for mandatory price cap LECs based on differences in their serving area size, geography, and demographics. These geographic factors, which are the "price of admission" for telcos, have a large impact on the overall unit costs and, thus, on the productivity of the various price cap LECs.

## **II. U S WEST'S CAPPED INDEX PLAN IS THE COMMISSION'S BEST CHOICE, GIVEN THE RECENTLY ADOPTED LEGISLATION AND GROWING COMPETITION IN TODAY'S MARKETPLACE**

Under U S WEST's proposed Capped Index Plan, no going-forward adjustments to the price cap index or its components by the Commission are necessary. No artificial safeguards, in the form of sharing or low-end adjustments, would be available or required.<sup>12</sup> No further adjustments to the PCIs would be made for in-

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<sup>11</sup> Comments of AT&T Corp., filed herein Jan. 11, 1996 at 8-29 ("AT&T"); Comments of Ad Hoc Telecommunications Users Committee, filed herein Jan. 16, 1996 at 4-5 ("Ad Hoc").

<sup>12</sup> As noted in previously filed comments and discussed below, these vestiges of rate-of-return regulation are no longer appropriate under any scenario selected by the Commission. See U S WEST Comments at 3-5.

flation, productivity, or exogenous costs.<sup>13</sup> The price cap formula used during the transition to the pure Capped Index Plan would be:

$$PCI_t = PCI_{t-1}(1 + \Delta A / R)$$

where

$PCI_t$  = the price cap index for the new period

$PCI_{t-1}$  = the price cap index for the previous period

$\Delta A$  = the dollar effect of sharing for 1995 under the interim plan and the reversal of previous periods' sharing per existing rules

$R$  = base period quantities for each rate element "i" multiplied by the price for each rate element "i" at the time the PCI was updated to  $PCI_{t-1}$

Once the transition to the pure Capped Index Plan is completed, price cap indexes for each LEC would stay in effect (with no need for further review) until a sufficiently competitive market is established and price caps are removed entirely.

The Capped Index Plan allows for the rapid development of competition, while maintaining the protection of existing caps on interstate access prices. Commission resources are also preserved because tariff filing oversight and price cap plan review burdens would be substantially reduced. These valuable resources could then be used in other proceedings to further expand the competitive landscape as envisioned by the Commission and the Telecommunications Act of 1996.

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<sup>13</sup> Supra note 6.

U S WEST's Capped Index Plan represents the Commission's best choice, given the increasingly competitive telecommunications marketplace. The evolution of this marketplace, especially in the light of new legislation, renders the existing price cap plan and any future, similar plan totally out of synch with reality. Ample proof of this increase in competition is seen in multiple state public utility commission proceedings and the public announcements made by interexchange carriers ("IXC"), competitive access providers ("CAP"), and alternative local exchange carriers ("ALEC") before and after the passage of the Act.<sup>14</sup> There is little possibility that a controversial regulatory plan would be able to keep up with these rapidly changing market conditions.

The industry could continue to debate the right productivity factor and exogenous cost treatment for LECs for many years and still not resolve these issues. However, the industry and the marketplace cannot afford to wait even one more year for these issues to be resolved. The time has passed for such regulatory schemes. Efficiency and simplicity should be the touchstone of future regulation. Competition is accelerating in all facets of the telecommunications marketplace. Current and future competitors include IXCs, ALECs, CAPs, cellular providers, personal communications service ("PCS") providers, local and long distance resellers, cable multiple system operators ("MSO"), gas and electric utilities, and the Regional

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<sup>14</sup> See, e.g., Communications Daily, Feb. 13, 1996 at 3, "Long-Time Competitors AT&T and MCI In Talks On Cooperating On New Projects;" PR Newswire, Feb. 22, 1996, "Texas Commission Reaffirms MFS' Request to Offer Service;" Business Week Magazine, Feb. 19, 1996, "MCI is Swarming Over the Horizon;" Telecommunications Reports, Feb. 12, 1996 at 15 "MCImetro Offers Local Exchange Service in Boston;" and at 10 "Allen Outlines AT&T's Plans for Local Market Entry."



Bell Operating Companies ("RBOC") which are moving to compete in each others' territories.

The Capped Index Plan allows regulation to mirror the effects of a competitive marketplace. In an unregulated monopoly environment, prices tend to be high in comparison to costs. In a truly competitive market, downward price pressure results from additional competitors entering the market and vying for the business of consumers. New entrants choose to enter the market based on their assessment of the potential profits based upon expected market prices.<sup>15</sup>

In addition, as a result of the Commission's efforts in the expanded interconnection dockets and provisions in the Telecommunications Act of 1996, interconnection will produce profound economic changes in the telecommunications market. Telephone networks are becoming accessible to all providers at an accelerating pace through additional levels of open architecture and network unbundling. The effect this change will have on telecommunications will parallel the effect open architecture had on the personal computer industry.

International Business Machines' ("IBM") implementation of DOS-based computers with an open architecture spurred significant competition as other firms developed and sold clones and related peripheral equipment and software. This approach produced exponential economic benefit to the computer industry beyond the

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<sup>15</sup> Unfortunately, the interstate access marketplace is currently burdened by Commission-imposed implicit and explicit subsidies in prices charged by the LECs. To ensure that the market is free from potentially harmful false economic signals, the Commission must move expeditiously to eliminate any artificial pricing components or equalize the application of such components to all competitors.

benefits of the original product released by IBM. The market for DOS-based equipment and software has continued to grow at a rapid pace. On the other hand, Apple Computer Inc. ("Apple"), which implemented a closed architecture, enjoyed initial profitability due to superior technology and end-user software, but without the stimulus provided by an open architecture, the market share for Apple products over the last five years became flat and more recently decreasing.<sup>16</sup>

The equivalent of open architecture in the computer industry is happening now in telecommunications. The Commission should fold into this docket the expectation that interconnection and unbundling in telecommunications will have the same effect of spurring competitive entry and price competition that open architecture had in the personal computer market, eliminating the need for continuation of the existing price cap plan.

Finally, the Capped Index Plan may provide other benefits to competition by reducing the potentially negative effects of artificial price reductions unwarranted in relation to the existing competitive marketplace. The Commission's desire to push prices down continuously and uniformly may actually have a detrimental effect on competitive entry.

Telecommunications markets are composed of many sub-markets or market segments. Competitive entry occurs when an incumbent charges prices that lead new entrants to believe they can compete profitably for customers, but this phe-

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<sup>16</sup> See FORTUNE, Feb. 19, 1996 at 66, "Paradise Lost, Apple's Quest for Life After Death," Brent Schlender.

nomenon does not occur uniformly across all market segments. In those market segments where entry occurs, competitive pressure naturally pushes prices down and all consumers benefit. However, when prices are being uniformly and continuously reduced through artificial regulatory pricing mechanisms that fail to recognize differences between market segments, the result is unnatural competitive entry. Competitive entry will be discouraged in some market segments where regulatory pricing actually discourages entry. In other market segments where existing prices are artificially inflated by subsidies, regulatory pricing mechanisms will not produce any net competitive benefits because competitive entry would have occurred in any event with interconnection and unbundling.

U S WEST urges the Commission to take a bold step and adopt its Capped Index Plan, which places a cap on the current indexes while allowing the competitive telecommunications marketplace, poised to explode as a consequence of the recently enacted legislation, to evolve naturally.

### **III. THE COMMISSION SHOULD EXTEND THE INTERIM PLAN**

The competitive landscape has been significantly altered by the enactment of the Telecommunications Act of 1996. As highlighted by the schedule recently released by the Commission, a significant number of new and highly consequential dockets are required for implementation of the Act. Many of these dockets will have considerable impact on competition in the telecommunications industry in the near term. The Commission has also proposed to begin a docket on another highly

important subject -- access reform. Consequently, the Commission should postpone final resolution of the Fourth FNPRM until such time as other more critical dockets have been considered fully and orders issued. Toward that end, if the Commission does not adopt U S WEST's Capped Index Plan, U S WEST proposes that the Commission extend the Interim Price Cap Plan established by the First Report and Order for one or two additional years.<sup>17</sup> This would enable the Commission to gain a more comprehensive understanding of potential competitive impacts resulting from the Act and the new dockets.

Deferring the adoption of new rules would also give the Commission additional time to adequately analyze U S WEST's Capped Index Plan and other recommended approaches and their associated data in a fully developed record. This extra time would be beneficial in determining the most appropriate plan in rapidly changing market conditions and would facilitate the industry's transition to any new plan. The Commission should continue the Interim Price Cap Plan for use in the next Annual Access Tariff Filings.

#### IV. IN A PRICE CAP PLAN WITH A PRODUCTIVITY ADJUSTMENT, U S WEST SUPPORTS THE CHRISTENSEN TFP METHODOLOGY

U S WEST again urges the Commission to adopt the proposed Capped Index Plan. The benefits of such a simple plan are significant and allow for better utilization of Commission and LEC resources. Price indexes will continue to be

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<sup>17</sup> First Report and Order, 10 FCC Rcd. 9054-59 ¶¶ 210-224 (1995).

capped, and the rapidly expanding marketplace will provide its own intrinsic checks and balances. However, absent adoption of the Capped Index Plan or continuation of the Interim Price Cap Plan, U S WEST recommends calculating LEC productivity using the Simplified TFP methodology developed by Christensen Associates and proposed by USTA in its comments in this proceeding.<sup>18</sup> LEC commenters universally support the Christensen Simplified TFP approach for any future calculations of industry productivity.

The Simplified TFP approach is superior to the other methods proposed in this proceeding for calculating a productivity factor because it best meets the three essential characteristics specified by the Commission in the Fourth FNPRM:<sup>19</sup> 1) data sources are publicly available and easily verifiable; 2) the methodology is economically meaningful; and 3) LEC productivity gains are passed to consumers via reductions in access pricing.<sup>20</sup> While several other parties attempt to discredit specific portions of the methodology, they present no credible alternatives for the Commission's consideration. In USTA's Reply Comments to those specific

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<sup>18</sup> See supra note 8.

<sup>19</sup> Fourth FNPRM ¶ 16 ("[T]he X-Factor should be economically meaningful . . . [it] should ensure that ongoing gains by the LECs in reducing unit costs are passed through to consumers . . . [and] calculation of the productivity offset should be reasonably simple and based on accessible and verifiable data.").

<sup>20</sup> Although LEC productivity gains are passed to IXC's through interstate access pricing, neither the LECs nor the Commission is able to ensure that the gains which are passed on to the IXC's are ultimately passed on to end-user consumers. See Dow Jones News, Feb. 16, 1996 "AT&T to Raise Basic Long-Distance Rates."

allegations, Christensen responds fully to each issue raised and confirms the appropriateness of its methodology.<sup>21</sup>

AT&T has presented a proposal for an alternative TFP method for the Commission's consideration. However, its "Performance Based Model" is just another thinly veiled attempt to advance a supposed TFP measurement which in reality is simply a return to rate-of-return regulation.<sup>22</sup> The Commission conceived and designed the Price Cap model as a price-based form of regulation meant to replace the antiquated and inappropriate rate-of-return or cost-based models. AT&T, in its purported TFP model, continues to use Commission accounting rate-of-return and booked values as a base. Neither is appropriate. U S WEST supports the rebuttals prepared by the National Economics Research Associates, Inc. ("NERA") and Dr. James H. Vander Weide, and filed as attachments to USTA's Reply Comments in this proceeding.<sup>23</sup>

The purpose of the Commission's requirement for a productivity factor is to provide an accurate measure of real LEC productivity and to pass through the benefits of LEC productivity that exceeds overall U.S. productivity in the form of lower access prices. The X-Factor was not designed to be used as a surrogate to

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<sup>21</sup> USTA Reply Comments at Christensen Attachment, "Total Factor Productivity Methods for Local Exchange Carrier Price Cap Plans: Reply Comments," ("Christensen Attachment").

<sup>22</sup> AT&T at 27-29.

<sup>23</sup> USTA Reply Comments at NERA Attachment, "Economic Evaluation of Selected Issues from the Fourth Further Notice of Proposed Rulemaking in the LEC Price Cap Performance Review, Reply Comments;" Vander Weide Attachment, "Affidavit of Dr. James H. Vander Weide in Support of Reply Comments of Bell Atlantic and the United States Telephone Association."

assure a prescribed Commission accounting rate-of-return. The Commission's adoption of price caps was a bold move to implement an improved system of regulation, capping prices without regard to endogenous costs or investment. The concept of price caps was to emulate in a regulatory system the pricing pressures of a fully competitive marketplace. In the case of LECs, the formulas for calculating price caps should not be based on factors relating to rate-of-return regulation. Doing so would simply put the LECs and the Commission back where they were some five years ago. This result is unacceptable to U S WEST and should also be unacceptable to the Commission as price cap regulation has produced significant benefits in the form of access price reductions and reduced need for regulatory oversight.

The Commission has also tentatively concluded that it is appropriate to include an input price differential ("IPD") in a TFP-based X-Factor.<sup>24</sup> U S WEST continues to support the Commission's proposed use of an IPD in calculating the X-Factor if a PCI adjustment factor is deemed essential.

V. **IF THE COMMISSION SELECTS A TFP-BASED METHODOLOGY, IT SHOULD ADOPT TWO PRODUCTIVITY FACTORS BASED ON GEOGRAPHIC DENSITY**

Many commenters in this proceeding advocate the use of a single productivity factor for all price cap LECs.<sup>25</sup> The use of a single X-Factor, however, would seem to

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<sup>24</sup> First Report and Order, 10 FCC Rcd. at 9033 ¶ 161.

<sup>25</sup> See, e.g., Comments of BellSouth Telecommunications, Inc, filed herein Jan. 16, 1996 at 34 and Attachment 1 ("BellSouth"); Comments of GTE Service Corporation and its affiliated domestic tele-

be based on the assumption that all LECs are alike, both in serving areas and technology deployed. This assumption is simply not accurate, as the Commission recognized in the Fourth FNPRM.<sup>26</sup> The Commission should rule in a manner that is fair to all parties, not just to the average of the parties. The “average” LEC is a mythical company, and the distribution of actual companies around the average may be large or small. Rules based on an average will create a situation in which LECs on either end of the range will suffer or benefit disproportionately.

Based upon the recognition that there are notable differences among the price cap LECs, the Commission has tentatively concluded that it should select multiple X-Factors in any going-forward price cap plan.<sup>27</sup> U S WEST agrees with the Commission and urges it to adopt two productivity factors for mandatory price cap LECs based on geographic density. As U S WEST demonstrates below, a two-factor plan is inherently more equitable, and geographic factors have a significant impact on a telephone company’s overall ability to increase productivity.

That a two-factor plan is inherently more equitable than a single-factor plan is demonstrated by the following simple arithmetic illustration. Suppose there are ten companies which, all other things being equal except geographic density, are capable of achieving 1%, 2%, 3% . . . 8%, 9%, and 10% productivity. Assume two al-

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phone operating companies, filed herein Jan. 11, 1996 at 37-38 (“GTE”); Comments of the Bell Atlantic Telephone Companies, filed herein Jan. 16, 1996 at 8-11 (“Bell Atlantic”).

<sup>26</sup> Fourth FNPRM ¶ 108.

<sup>27</sup> Id.



ternative productivity plans: a single-factor plan at 5.5% and a two-factor plan at 3% and 8%. Finally, make the reasonable assumption that the difference between each company's achievable productivity and the plan's productivity factor is a measure of windfall gains and losses, i.e., the equitableness of the single- and two-factor plans. The following table summarizes these assumptions.

Company	Achievable Productivity	5.5% Single Factor Plan	Plan Diff	3%/8% Two Factor Plan	Plan Diff
A	10%	5.5%	4.5%	8%	2.0%
B	9%	5.5%	3.5%	8%	1.0%
C	8%	5.5%	2.5%	8%	0
D	7%	5.5%	1.5%	8%	-1.0%
E	6%	5.5%	.5%	8%	-2.0%
F	5%	5.5%	-.5%	3%	2.0%
G	4%	5.5%	-1.5%	3%	1.0%
H	3%	5.5%	-2.5%	3%	0
I	2%	5.5%	-3.5%	3%	-1.0%
J	1%	5.5%	-4.5%	3%	-2.0%

As the above table shows, the single-factor plan produces much larger windfall gains and losses (Plan Diff columns) for the companies than does the two-factor plan. Even though the gains and losses for all the companies in total cancel each other, the two-factor plan minimizes the size of the gains and losses for the individual companies and, thus, is a more equitable plan.

U S WEST proposes that the X-Factor be dependent on geographic density factors because geographic density has a significant impact on productivity growth. Reality is that some LECs are blessed with more geographic "advantages" than oth-

ers. To ignore geography and demographics is to ignore costs, and the ability to reduce overall costs has a direct bearing on the ability to increase productivity.

Based on the relevant geographic information of the individual RBOCs, the local telephone business is obviously not composed of homogeneous entities. Many differences tied to geographic and demographic considerations exist. For instance, as can be seen in Chart 1, the serving territories of the RBOCs are vastly different in size. Three companies serve territories that are two to six times larger than the territories of the other four RBOCs.

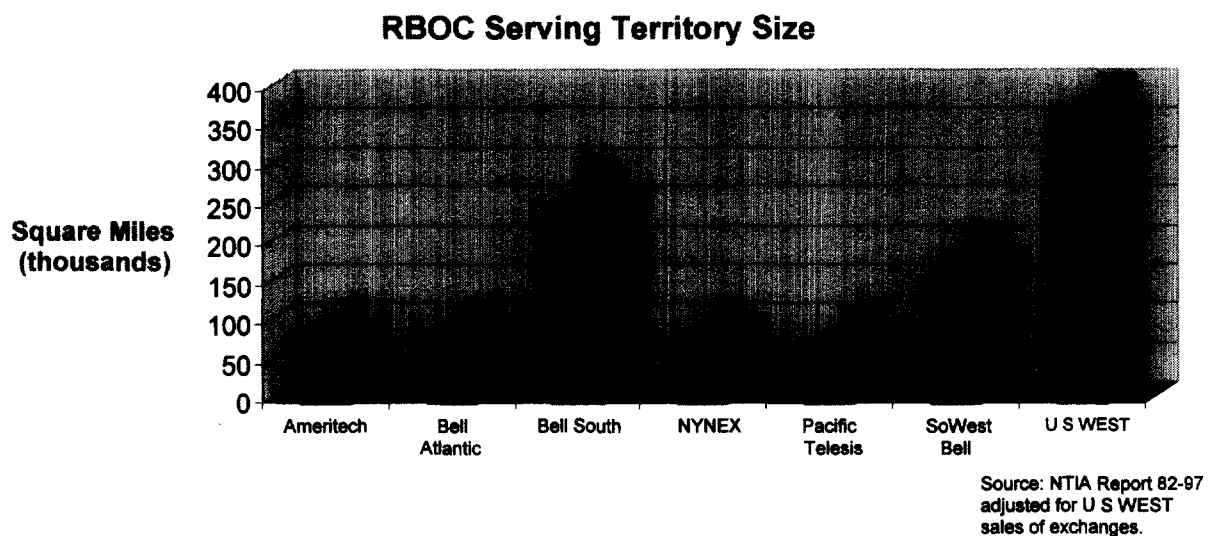


Chart 1

Chart 2 shows that there is also significant variation in total access lines per company.

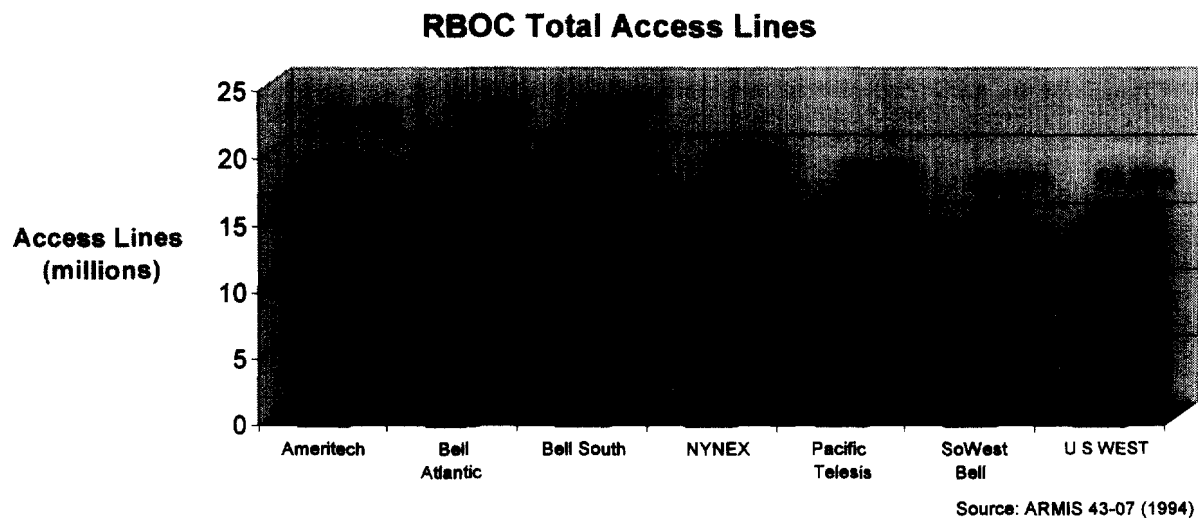


Chart 2

Combining the information on serving territory size and access lines, Chart 3 demonstrates that the three RBOCs with the largest territories are also the RBOCs with the fewest access lines per square mile. In fact, there is a wide gulf between the four RBOCs with access lines per square mile in excess of 250 and the other three RBOCs with fewer than 90 access lines per square mile.

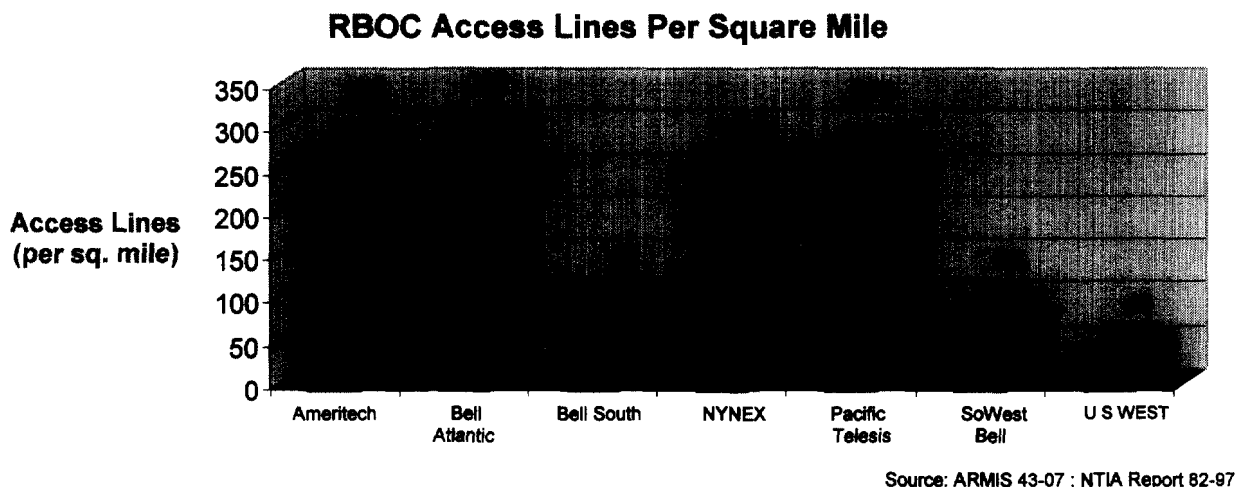


Chart 3

Geographic density also reflects itself in a LEC's mix of urban versus rural lines as Chart 4 depicts.<sup>28</sup> As might be expected, the three RBOCs with the largest serving territories and the fewest lines per square mile also serve a higher percentage of rural lines than the other four RBOCs.

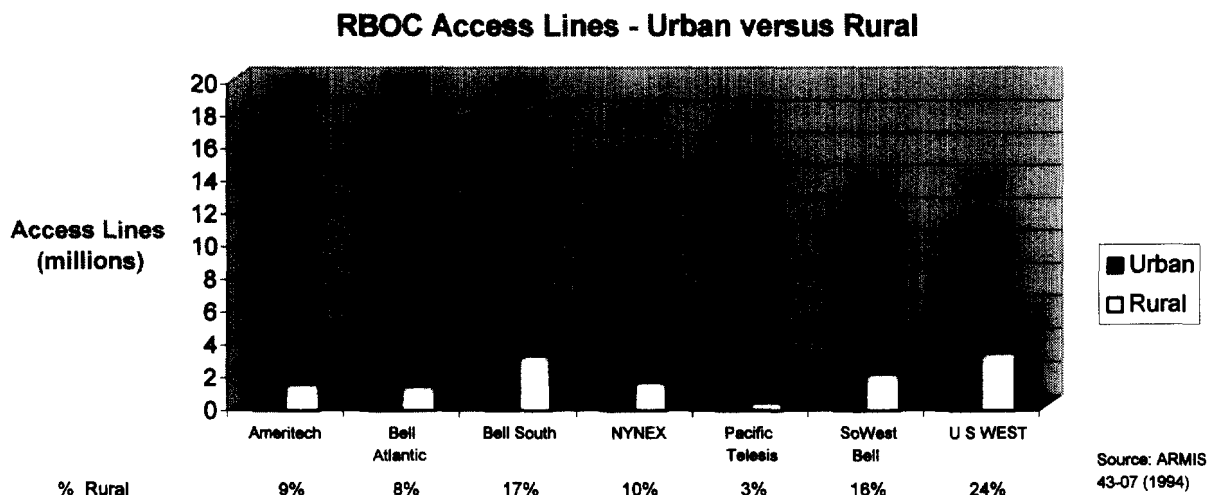


Chart 4

Large serving territories coupled with high rural line percentages result in those companies owning and operating more Class 5 end office switches than companies with greater density, as shown in Chart 5.<sup>29</sup> The companies with lower density also have a higher percentage of rural switches.

<sup>28</sup> Urban versus rural is based on the definition of Metropolitan Statistical Area ("MSA") vs. Non-MSA as defined by the U. S. Department of Commerce. MSAs include at least one city with a minimum population of 50,000 or a Census Bureau-defined urbanized area with a population of at least 50,000 located in an area with a minimum population of 100,000. Rural areas are those not included in an MSA.

<sup>29</sup> This also equates to longer loop length and higher repair and maintenance costs.

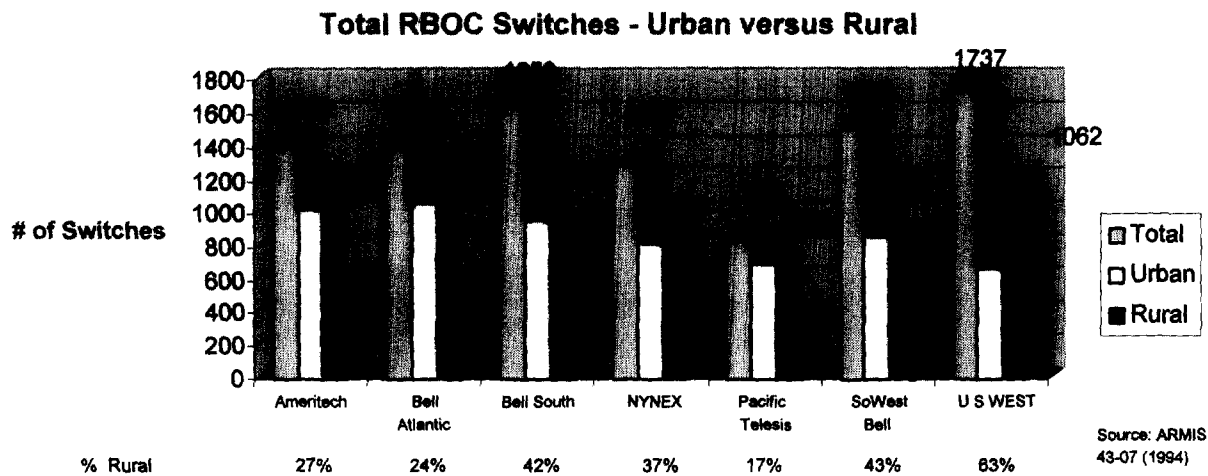


Chart 5

Looking from a different perspective, Chart 6 shows that the three companies with lower density serve fewer access lines per switch than the four companies with higher density.

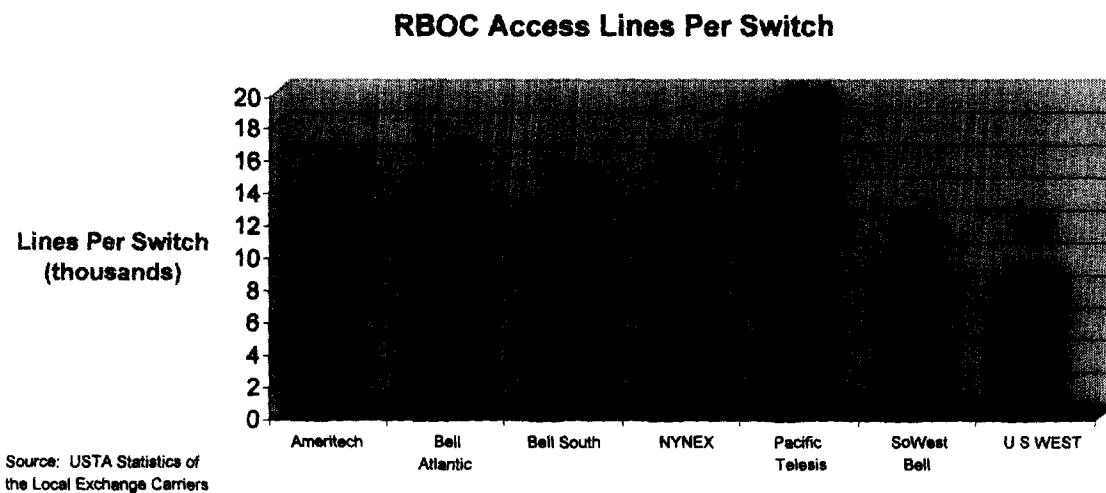
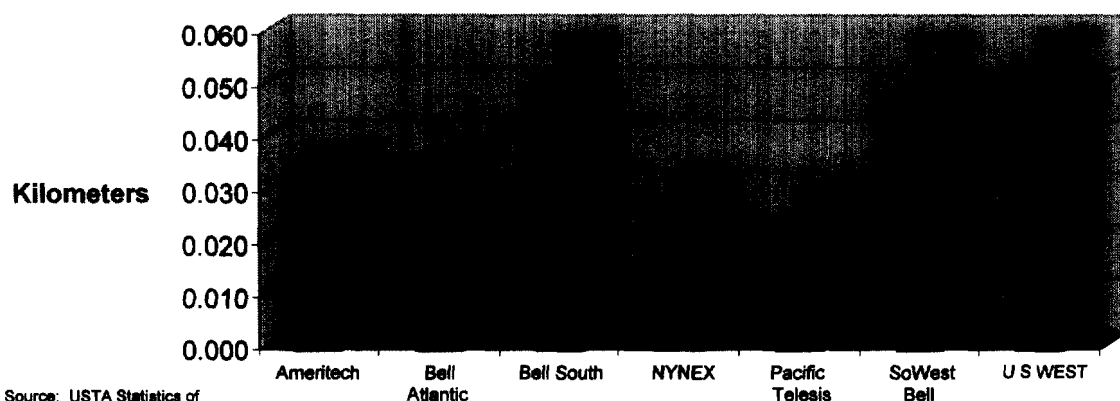


Chart 6

Low density also affects loop length. Chart 7 below shows that the three companies with lower density have longer cable and wire facilities ("C&WF") per line than the four companies with higher density.

### RBOC C&WF Kilometers Per Access Line



Source: USTA Statistics of the Local Exchange Carriers

Chart 7

All of the aforementioned geographic and customer factors have a bearing on a company's ability to achieve productivity gains. Two key drivers of investment cost are distance, both between switches and between customers and their switch; and density, the number of customers served by each switch.

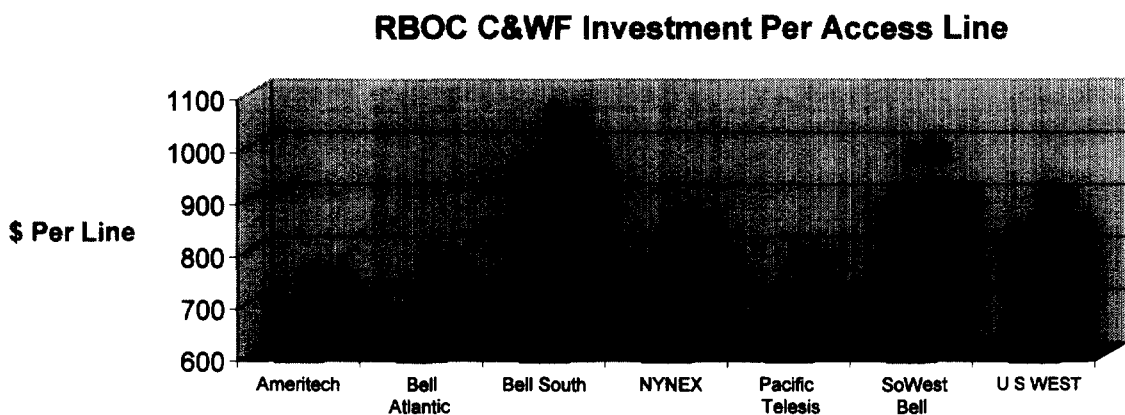
Large geographic serving territories with high rural end-user percentages result in long distances between switches and between customers and their switch. Such geographic serving territories force LECs to deploy many small trunk groups which are less economical than large trunk groups.<sup>30</sup> The incremental costs of adding capacity on larger trunk groups are less than on smaller trunk groups. The faster a company can gather and funnel its traffic into large trunk groups, a capability affected by geography and customer density, the lower its incremental costs of

<sup>30</sup> Trunk engineering economics based on queuing theory support the fact that large trunk groups can carry more average minutes of use per trunk than smaller trunk groups.

expanding network capacity for traffic growth. Lower costs for added capacity lead to higher productivity.

The incremental costs of providing facilities to hook up new customers are also lower when customers are nearer their end offices. Costs are higher the farther customers are from the end office, as in rural areas. In addition, installation, maintenance, and repair expenses are also affected directly by distances between switches and between customers and their switches. Longer distances translate into higher costs because employees must spend more time on the road as they commute between work locations and customers' premises. Consequently, the incremental costs of additional network capacity are higher, and achievable productivity is lower when switches and customers are more geographically dispersed than when they are more concentrated.

As the above information suggests, those companies with lower density do tend to have higher costs per access line. Chart 8 below shows that pattern for C&WF investment per line.



Source: ARMIS  
43-02

Chart 8

Similarly, Chart 9 below demonstrates a similar pattern for central office investment per line.

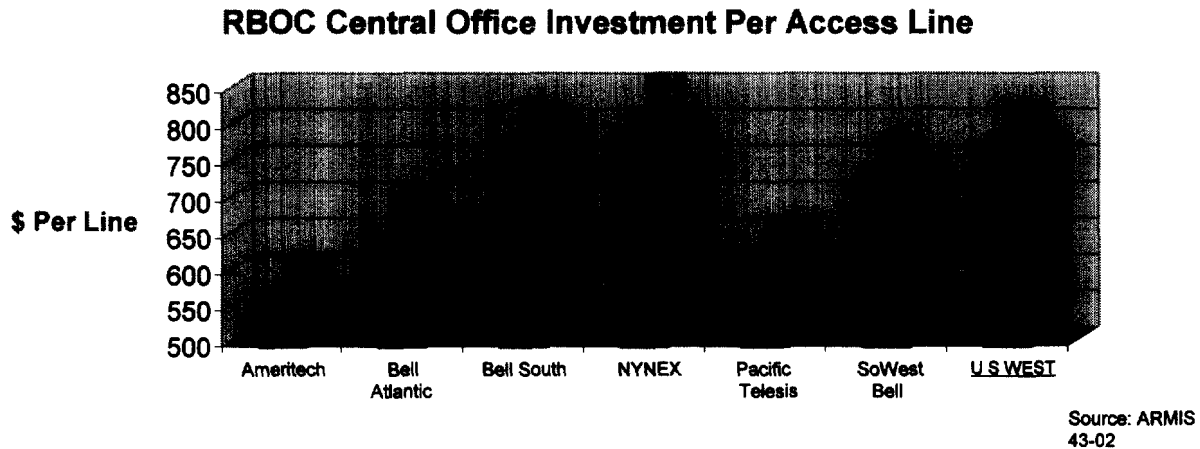


Chart 9

The bottom line is that companies with the advantage of greater geographic density can handle growth with lower cost expenditures than geographically disadvantaged companies. Their output in relation to their input can improve more quickly, meaning their productivity is likely to be higher for no reason other than their geography and customer density.

As can be seen from the data, there seems to be a natural division between the three RBOCs with less geographic density (as shown by access lines per square mile) and the four with greater density. This natural division leads U S WEST to propose the establishment of two productivity factors, neither with a sharing option. The two factors would be applied to the mandatory price cap LECs based on geographic density. One factor would be based on the Christensen Simplified TFP method, including an input price differential; the other factor would be set at a level which is approximately 75% of the first factor. Geographic density determinations



would be based on access lines per square mile of serving territory. This criterion is simple, uses publicly available data, and clearly measures the density characteristics of individual LEC serving areas. Assignment of a productivity factor is also clear: LECs whose access lines per square mile are less than or equal to approximately 75 to 80% of the average number of access lines per square mile would use the lower productivity factor; all other LECs would use the higher productivity factor.<sup>31</sup>

**VI. U S WEST RESPONDS TO ISSUES IDENTIFIED BY THE VARIOUS COMMENTERS IN THIS PROCEEDING**

**A. Commission Prescribed Depreciation Rates Are Not Appropriate Inputs For TFP Calculation**

MCI Communications Corporation ("MCI") asserts that prescribed depreciation rates are the appropriate inputs for TFP calculation. In support of their assertion, MCI cites a Baseman and Van Gieson ("B&VG") study which they argue indicates that the Commission's current policy for setting depreciation rates has not led to a significant overvaluation of assets (as measured by the existence of reserve deficiencies), and thus adequately reflects the economic life of plant.<sup>32</sup>

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<sup>31</sup> Of course the Commission could choose to use as a threshold a specific number of access lines per square mile based on the natural division between the two types of companies, high density and low density.

<sup>32</sup> Comments of MCI, filed herein Jan. 11, 1996 at 18.